

### REMARKS

Claims 17-24, 29, 31, 33, 34, and 36-38 are pending in the application upon entry of the amendments. Favorable reconsideration is respectfully requested in light of the amendments and remarks herein.

#### The Amendments

Independent claims 17 and 21 have been amended to disclaim the cited art. Support for the amendments is found in the specification, for example, in Figures 1 and 2 respectively.

#### The Obviousness Rejection

Claims 17-24, 29, 31, 33, 34, and 36-38 stand rejected under 35 U.S.C §103(a) over Romanenko et al (WO 01/087798) and equivalent Romanenko et al (EP 1205241). Romanenko relates to a catalytic composition of palladium and rhodium, palladium and ruthenium, or of palladium and platinum for the purification of terephthalic acid; and a method of preparing such compositions for the purification of terephthalic acid using conventional granulated porous carbon materials.

The Examiner contends that Romanenko discloses the purification of terephthalic acid to be carried out on the catalyst containing palladium and ruthenium prepared with granulated porous carbon materials of Table 1 (Romanenko). The Examiner concedes that the subject claimed pore sizes fail to fall within the prior art. However, the Examiner further appears to contend that Romanenko suggests pore sizes up to 5000 Å; that it reasonably follows that pores larger than 5000 Å are also present in the granulated porous carbon material of Romanenko; and that the percent of Hg porosity is naturally obtained as a result of evaluation.

Independent claim 17 requires that the extruded activated carbonaceous material comprises a first set of pores having a pore diameter of at minimum about 40 Å and at

most about 100 Å with a porosity of between at minimum about 0.15 cc/g and at maximum about 0.25cc/g, and a second set of pores having a pore diameter between 5,000 Å and 20,000 Å with a porosity of at minimum about 0.3 cc/g and at maximum about 0.6 cc/g. Contrary to the claims, Romanenko teaches pores that have an average mesopore diameter within the range of 40 to 400 Å (EP 1205241; page 3, lines 42-43), porous carbon materials having average pore sizes between 19-107 Å (EP 1205241; page 11, table 1), and that at least 0.5 of the total pore volume is within the range of average mesopore diameter (EP 1205241; page 3, lines 43-44).

The subject claims are distinguishable because Romanenko fails to teach or suggest an extruded activated carbonaceous material having two sets of pores, the second set having a pore diameter that is greater than an order of magnitude larger than the mesopore diameters taught by Romanenko, with a porosity of at minimum about 0.3 cc/g and at maximum about 0.6 cc/g. Moreover, the pore sets of claimed extruded activated carbonaceous material are distinguishable from common granulated porous carbon as exemplified in figure 1 of the subject application.

The Examiner also points to cited parameter  $V_{\Sigma}$  (EP 1205241; page 11, table 1) to support his contention that pore sizes greater than 5,000 Å would be obvious to a person having skill in the art at the time of invention. Romanenko expressly discloses  $V_{\Sigma}$  is the volume of pores whose size is smaller than 5,000 Å. Nevertheless, since Romanenko teaches that 0.5 of the total pore volume is within the range of 40 to 400 Å (EP 1205241; page 3, lines 43-44) it follows the remaining pore volumes incidentally occur between the said range and 5,000 Å, a person having ordinary skill in the art must conclude that the substantial sum of all pore volumes ( $V_{\Sigma}$ ) occurs in pores having diameters less than 5,000 Å. Hence, a person having ordinary skill in the art would not have been motivated to add a second pore set having diameters between 5,000 Å and 20,000 Å with a porosity of at minimum about 0.3 cc/g and at maximum about 0.6 cc/g, based upon the teachings of Romanenko.

With respect to independent claims 21 and 33, the Examiner concedes that Romanenko is silent regarding 34% of total Hg porosity in pores having a diameter of about 5,000 Å. However, the Examiner contends that since porosity is the ratio for the non-solid volume of the total volume of the material, that this value can be determined by Hg penetrometry; therefore the percent of total Hg porosity can be naturally obtained as the result of evaluating the porosity of the carbonaceous material, but it is not associated with the novelty of the carbonaceous material in the granulation process. Independent claims 21 and 33 require that an extruded catalyst support comprising an extruded activated carbonaceous material having pores wherein at minimum 34% of total Hg porosity occurs in pores having a diameter of 5,000 Å and larger in the extruded activated carbonaceous material.

Although it is true that porosity is a measurable feature by Hg penetrometry, 34% of total Hg porosity in pores having diameters greater than 5,000 Å is a nonobvious feature of the claimed invention because Romanenko fails to teach or suggest any pores greater than 5,000 Å in diameter. Further, **Romanenko teaches that substantially all pore volumes occur in pores having diameters less than 5,000 Å ( $V_z$ )**. It follows that since Romanenko teaches that all porosity occurs in pores smaller than 5,000 Å, a person having ordinary skill in the art at the time of invention would NOT be motivated to modify the catalytic composition of Romanenko to include extruded activated carbonaceous material having pores wherein at minimum 34% of total Hg porosity occurs in pores having a diameter of 5,000 Å.

The Applicant's representative also notes that the claimed combination of small and large pore sets has improved and unexpected results over Romanenko, the claimed composite has markedly increased 4-CBA removal rate when employing the same or less palladium as compared to a conventional carbon material as taught in Romanenko (e.g.

Pica G202X; page 15, table 1).

Since a person having ordinary skill in the art at the time of invention would not be motivated to modify the catalytic composition of Romanenko to include extruded activated carbonaceous material having pores wherein at minimum 34% of total Hg porosity occurs in pores having a diameter of 5,000 Å, and the subject invention demonstrates an improved and unexpected result over Examiner's reference, it is respectfully requested that the rejection of claims 17, 21, and 33 is withdrawn.

Regarding dependant claims 18-20, 22-24, 29, 31, 34, and 36-38, since said claims incorporate all of the features of respective independent claims 17, 21, and 33; Applicants respectfully request that rejection of claims 18-20, 22-24, 29, 31, 34, and 36-38 is also withdrawn.

Petition for Extension of Time

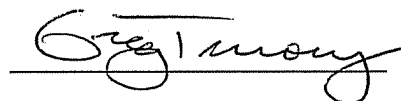
A request for a two month extension of time is hereby made. Payment is being made through the EFS electronic filing system.

Should the Examiner believe that a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to our Deposit Account No. 50-1063.

Respectfully submitted,

**AMIN, TUROCY & CALVIN, LLP**

A handwritten signature in dark ink, appearing to read "Greg Turocy", written over a horizontal line.

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